



Organización Internacional del Café  
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Organisation Internationale du Café

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### **Project outline**

**Programme for the prevention of mould formation (Ochratoxin A) and its occurrence in coffee in Ecuador**

### **Background**

The project originates from the Republic of Ecuador and is sponsored by the International Coffee Organization (ICO) as supervisory body. The Executive Board of the ICO endorsed the project subject to consultation with the FAO and agreement from them that the project could be included within the framework of existing project ICO/06. This has been done and the programme below has been developed by consultation between the country and the FAO project management team, as a fast-track project proposal for consideration by the Common Fund for Commodities (CFC).

### **Action**

The Executive Board is requested to note this project outline.

**FAST-TRACK PROJECT PROPOSAL  
TO THE COMMON FUND FOR COMMODITIES**

<b>Project title :</b>	<b>Programme for the prevention of fungal mould formation (Ochratoxin A - OTA) affecting coffee quality in Ecuador</b>
<b>Duration:</b>	Three months
<b>Location:</b>	Republic of Ecuador, a country producing Arabicas and Robustas, with a significant soluble coffee industry.
<b>Specific areas:</b>	Mamba, the country's southern area, western and eastern foothills of The Andes, Galapagos: Arabicas. Humid tropical coastal areas and humid tropical eastern areas: Robustas.
<b>Nature of the project:</b>	Fast-track project to be integrated with existing project ICO/06 for training of coffee farmers, field workers, exporters and processors in the prevention of mycotoxin-producing mould (fungi) particularly Ochratoxin A (OTA), during harvesting, processing, warehousing and the exposure of coffee beans to humidity, in order to improve the quality of Ecuadorian export grade coffee
<b>Financing sought from the Common Fund:</b>	US\$65,456 [US\$44,456 without laboratory] NB. Local counterpart contributions for some items (see point D below) are envisaged together with some expertise costs covered by project ICO/06.
<b>Participating institutions:</b>	<i>Asociación Nacional de Exportadores de Café</i> (ANECAFE)
<b>Project Executing Agency:</b>	FAO (Integrated into management of project ICO/06)
<b>Supervisory body:</b>	International Coffee Organization
<b>Objectives of the proposal:</b>	To make field workers who provide technical assistance to coffee growers in Ecuador, coffee farmers, exporters and soluble coffee processors aware of food safety risks entailed in inadequate harvesting, processing and warehousing of coffee beans.

To ensure that field workers, producers, exporters and processors apply this knowledge to prevent the formation of mould (fungi) responsible for the generation of mycotoxins such as Ochratoxin A (OTA) which has undesirable effects on world consumption.

To improve the quality of Ecuadorian coffee destined for export.

The importance of incorporating Ecuador into the mould prevention work of project ICO/06 is that Ecuador has the unusual characteristic of producing both Arabica and Robusta with an important soluble coffee industry. Mould contamination has been detected, particularly in soluble coffee, and there is a need to develop appropriate methodologies to avoid this in the specific conditions of a country where significant volumes of coffee go to the soluble industry.

**Execution strategies:**

The FAO as PEA will designate two experts in mould (OTA) prevention to undertake training of field workers, exporters and processors for a period of three months in Ecuador.

The designated experts will organise lectures and workshops and will carry out research with the participation of personnel working in the coffee sector of Ecuador in the country's main coffee producing areas.

## **PROGRAMME FOR THE PREVENTION OF MOULD FORMATION, AFFECTING COFFEE QUALITY IN ECUADOR**

### **A. Project Background and Commodity Strategy**

The project originates from the Republic of Ecuador and is sponsored by the International Coffee Organization (ICO) as supervisory body. The Executive Board of the ICO endorsed the project subject to consultation with the FAO and agreement from them that the project could be included within the framework of existing project ICO/06. This has been done and the programme below has been developed by consultation between the country and the FAO project management team, as a fast-track project proposal for consideration by the CFC.

### **B. Commodity Strategy**

The complete project proposes to improve the quality of Ecuadorian green coffee through training of farmers, green coffee and soluble coffee manufacturers on how to reduce the risks of mould formation, and Ochratoxin A formation, by applying the improvements already identified in the following documents:

1. Pilot study by the European coffee industry
2. Publications of specific work carried out by coffee industry and academic researchers both in producer and in consumer countries
3. Reports of FAO TPC project in Uganda
4. Reports of the on-going activities of the CFC/ICO/FAO multi-centre project
5. Conclusions of the three ASIC workshops of 1997 (Nairobi), 1999 (Helsinki), and 2001 (Trieste, in preparation)

### **C. Project Objectives and Rationale**

The main goals pursued by the project are:

- the sharing of information with field workers, who provide technical assistance to coffee growers in Ecuador, coffee farmers, soluble coffee processors and exporters, on all progress made worldwide so far in the solution of the problem;
- to create awareness of the mould problem – food safety risks entailed in inadequate harvesting, processing and warehousing of coffee – among all the coffee operators in Ecuador;
- to ensure that field workers, producers, exporters and processors apply this knowledge to prevent the formation of the mould responsible for Ochratoxin A (OTA) contamination of coffee products;
- to improve quality and value of all types of Ecuadorian coffee.

#### ***Component 1 by Ecuador (one to two months)***

Activity 1: Documentation.

Objective 1: To adapt to the Ecuadorian situation all the pertinent material available.

Output 1: To make available, if needed to translate into Spanish, the following documents:

1. M. Frank: *Coffee microbiological handbook* (a translation may not be necessary if the Ecuadorian microbiologist has been trained in the USA)

2. D. Duris: *Socio-economic questionnaire*, adapting it to the Ecuadorian situation
3. R. Viani: *Training material from the Uganda Training of Trainers workshop of 1999* (the Powerpoint material should be translated into Spanish)
4. ASIC: *Proceedings of the three Workshops held in Nairobi (1997), Helsinki (1999), Trieste (2001, in preparation)*
5. FAO: *Food quality and safety systems* (as a guideline for the training of trainers).

Activity 2: Assembling the team.

Objective 2: Identification of the national staff.

Output 2:

- (i) Formation of a core team composed of
  - One production expert/socio-economist
  - One microbiologistThey must either be assigned full time to the project or, at least, have precise jobs responsibilities and programs within the project and throughout the lifespan of the project.
- (ii) Identification of a technical draughtsman/artist (or photographer) to be engaged for one mission in the preparation of divulgation material

***Component 2 by an international consultant with the local team - field trips to the Robusta and to the Arabica growing regions (two weeks) and Training of Trainers workshop (one week)***

*An important step in the identification and solution of problems specific to Ecuador is the review of the status of the art in Ecuador by an expert on the mould question, so that all Training of Trainers is pertinent to the local situation.*

Activity 3: To visit together with the national staff, if possible at peak harvest, as many as possible of the Ecuadorian coffee production regions: Manabi, the country's southern area, western and eastern foothills of The Andes, Galapagos: Arabica production. Humid tropical coastal areas and humid tropical eastern areas : Robusta production.

Objective 3: To verify production practices and increase the level of awareness of the mould question by the local staff.

Output 3:

- (i) Identification of main breaches of GAP/GMP/GHP and have them drawn (filmed) by the artist
- (ii) Finalization of the Training of Trainers program, adapting the technical training material to the Ecuadorian situation
- (iii) Execution of the Training of Trainers Workshop.

***Component 3 by an international expert (one to three weeks), in parallel with Component 2***

*Mould contamination is a question both of good agricultural and manufacturing practices and of good hygiene practices; if sufficient funds are available, specific training of the local project staff by an expert in coffee microbiology would rapidly enhance the level of awareness of the question.*

Activities 4:

- (i) Verification of the level of competence of the national mycologist, and the national production expert/socio-economist, eventually training them either in Ecuador or in own laboratory
- (ii) [Assistance in the creation of coffee mycological laboratory capacity<sup>1</sup>].

Objective 4: Enhancement of coffee GHP awareness and competence within ANECAFE.

Output 4: Coffee mycological know-how [and facilities].

***Component 4 by the Ecuadorian staff (total time depending on total number of trainees)***

*Training, as different from informing, involves having the trainee put into practice and experiment with the teachings received.*

Activities 5:

- (i) To conduct training courses for field workers in
  - Coca-Lago Agrio-Tena
  - Santo Domingo
  - Portoviejo-Jipijapa
  - Loja-Alamor
- (ii) To conduct training courses for coffee growers
- (iii) To conduct training courses for processors
- (iv) To conduct training courses for exporters

no more than 25 trainees/3 days' workshop.

Objectives 5: To train all field workers and operators in the coffee sector in GAP/GMP/GHP.

Output 5: Better quality coffee.

***Component 5 by the supervisory body (one week)***

Activity 6: Mission by an international expert.

Objective 6: To review progress.

Output 6: Final assessment of the project.

**D. Broad project costs and financing**

- (i) In-kind (staff and material) participation by ANECAFE.
- (ii) Funds sought from CFC for:
  - a. Translation into Spanish of training material (local contribution)
  - b. Workshops (3 for **US\$5,616**, according to document WP-Board No. 892/00 dated 18 December 2000)

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<sup>1</sup> If sufficient funds are available.

- c. Travel expenses and DSA by international consultant(s) (**US\$6,000**; their emoluments would be already covered by the reduction of mould project)
- d. Travel expenses for study tour for national microbiologist and processing/socio-economic expert, or for international expert (**US\$6,000**)
- e. Fee, DSA for national microbiologist and processing/socio-economic expert (**US\$21,840**, according to document WP-Board No. 892/00 dated 18 December 2000)
- f. DSA for one draughtsman/photographer for one mission (to be estimated by Ecuador, **local contribution**)
- g. At least one rapid moisture meter (ca. **US\$2,000**)
- h. [Equipment for a coffee microbiological laboratory, ca. **US\$21,000**)<sup>2</sup>]
- i. Supervisory mission costs, **US\$3,000**.

#### **E. Organization and management**

Managed by local staff with the technical assistance of the international consultant(s), already active in the CFC mould reduction project ICO/06 (coffee production expert, possibly coffee mycologist)

#### **F. Beneficiaries and benefits**

Ecuador coffee population shall directly benefit.  
All coffee producing countries through the know-how acquired.  
The reduction or risk of rejection and added value to exported coffee.

#### **G. Issues and follow-up actions**

The project must broadly last two harvest seasons:

- (i) The first for training and implementation
- (ii) The second for verification of results

The Ministries of Trade and of Agriculture and the coffee quality assurance bodies of ANECAFE must be involved from the beginning of the project.  
Guidelines for coffee production must be put in place by ANECAFE as a result of the project.

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<sup>2</sup> *If sufficient funds are available.*